

PATC-MS Tips and Tricks

25 Reasons to hire a Certified Guide

Source (give credit where credit is due): Geir Hundal (www.geir.com)
Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope X Trad X Mountaineering X
Sport X Ice X Other (list) X

I originally posted this list on the PATC listserve last year. Recently, someone suggested that it should be posted as well on the PATC webpage.

This list came from Geir Hundal's website www.geir.com. Geir is a certified AMGA guide and obviously he would like for climbers to hire his company for guided outings.

Whether or not you ever hire Geir or any other guide for a climbing trip, this list of skills, techniques and systems is a good list of items for all climbers to know so as to expand their "bag of tricks." Some of the skills listed are for efficient and safe climbing/anchoring. Others are for emergency situations (i.e. self rescue, etc.)

Geir's list follows:

1. do you know how to read a topo?
2. do you know how to use a cordalette?
3. can you build a multi-directional equalized anchor?
4. do you know what extension in an anchor is, and the reason it is a concern?
5. do you know what the effective range of your cams are?
6. do you know what types of rock features accept cams vs. the types of rock features that accept chocks?
7. do you know when it is appropriate to extend a draw on a piece of gear?
8. do you know how much force is generated in a typical lead fall? How much force is generated in a top rope fall?
9. do you know there is a much better option to tying in with a daisy chain?
10. are you able to belay two people at the same time while keeping the station organized?
11. do you know when it is appropriate to belay off the anchor vs. off your harness?
12. do you know when it is appropriate to belay with an autolocking device vs. a plaquette device vs. a plate device?
13. can you escape a fully loaded belay without unloading it?
14. do you know how to quickly and easily extend the master point of your anchor?
15. do you know when to use hip/shoulder belays vs. terrain feature belays?
16. while belaying a second to an anchor, could you set up a rappel and have yourself on rappel before your second arrived?
17. do you know how to back up a rappel?
18. do you know how to back up a lower?
19. if your partner were injured on a multipitch climb, could you smoothly and efficiently get him down, even if he is large and unable to assist you?
20. if you had to lower someone 350 feet with two joined ropes, could you do it smoothly and confidently? How about if your partner was unable to assist you by unweighting the rope?
21. if your partner was injured on lead beyond the halfway point of the rope, would you know how to get him down?
22. using mechanical advantage, could you raise a second up a pitch if the circumstances demanded it?
23. do you know how to set up a tandem rappel? Do you know the advantages and disadvantages of tandem, simultaneous and counterbalanced rappels?
24. have you practiced these skills in the last month? In the last 6 months?
25. can you manage your rope at belay stances? How about two ropes? At hanging belays? When swapping leads vs. not swapping leads?

How many did you answer in the affirmative? Climb safe.

Bringing old shoes back to life

Source: Some old schooler at The Red

Contributed by: Galen Westman - westmangalen@yahoo.com

Best useful for: Top rope X Trad X Mountaineering _____
Sport X Ice Other (list) _____

Description: Use "Bug and Tar" remover to bring back to life
polished sticky rubber. Spray a small amount on the bottom of your climbing shoes
and wipe off excess with paper towel.

Using your "Guide" Belay Device as an Ascender when Rappelling

Tip/Trick/Gimmick: Using your "Guide" Belay Device as an Ascender (if needed) when Rappelling

Source: (give credit where credit is due): American Alpine Institute
Climbing Magazine

Contributed by: John Huber (jhuber@nora-oilheat.org)
(include e-mail address so membership can contact you for more detail)

Most Useful For: Top rope Trad x Mountaineering x
Sport Ice x Other (list)

Description: Many climbers do not know that a guide mode rappel device (i.e. Petzl Reverso, BD Guide) can be used as an ascender if the need arises for you to go back up the rope(s) while in mid-rappel.

Basically, you set up the device as usual for rappelling, but you do not put the device on your belay loop, but rather on a sling to form an extended rappel set up. When the need arises to ascend back up the rope (for whatever reason), it is possible to re-arrange the belay device into the Guide Mode to serve as an ascender. Depending on the terrain/angle of the descent, etc. there are several different steps/techniques to transition the device into an ascender:

- Get "safe" (on a ledge, lock off rappel device with friction hitch, etc.)
- Tie off rope below device to harness
- Put locking biner through large "hole" on rappel device
- Unweight rap device either by standing on a ledge or attaching foot prusick loop above device and stepping up onto it
- Attach "new" biner to belay loop and weight device
- Device is now in auto-block belay mode and rope can be pulled through device as you ascend

On relatively benign slabs (think Buzzard's Rocks), you might get away with just walking back up the slab taking in slack on your locked off rappel device. On steeper terrain, you would need to add a friction hitch above the device to serve as a foot prusick loop to allow you to ascend the rope.

A more complete description (and photos) can be found on American Alpine Institute's and Climbing magazine's websites (shown below).

<http://alpineinstitute.blogspot.com/2011/03/rappelling-rope-climbing-trick.html>
<http://www.climbing.com/skill/rappel-to-ascend/>

This technique can allow you to easily transition back and forth between rappelling and ascending as needed. This is an emergency technique; it is not something you would use/do on a regular basis. It is just another tool in your "tool box" – what if you find yourself in a jam and you lack sufficient sling/prusick material to set up a "normal" ascent up a fixed line?

Climb safe.

(Marty – I've used this technique; it works. However, I am not sure I would use it to ascend a long rappel rope. Depending on how much rope is hanging below you (weight and the diameter of the rope, i.e. friction) it can be a real grunt fest to have to pull the rope(s) through the device for a long ascent. For a long ascent, I would probably use the conventional two loop prusick system, one harness loop and one foot loop).

Extending the Belay Masterpoint

Tip/Trick/Gimmick: Extending the Belay Masterpoint

Source (give credit where credit is due): Various sources

Personal experience

Climbing magazine

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

(include e-mail address so membership can contact you for more detail)

Best useful for: Top rope Trad x Mountaineering x
Sport Ice x Other (list)

Travis Senor suggested I write up this tip/trick.

On occasion, the belay anchor site and the optimal place to belay are not the same. Perhaps the anchors are located back from the cliff edge, but you want to belay at the cliff edge so that you can see your second and be able to give them both vocal and visual encouragement/help for the pitch.

There are several ways to extend the belay masterpoint away from the pro/gear anchor site. Depending on the terrain (benign slab or steep wall) and the skill and experience of the second there are different techniques to use when setting up this technique.

Things to consider:

- Once the second arrives at the masterpoint, can you casually walk to the anchors?
- Or after arriving at the masterpoint, does the climbing to the anchors require additional belaying for the second?
- Can you (the belayer) return easily/safely back to the anchors?

Different scenarios would possibly require different set-ups. One suggested approach was detailed in Climbing magazine. The link to Climbing magazine's article: "Extending an Anchor on a multi-pitch route" is:

<http://climbing.com/skill/extending-an-anchor-on-a-multi-pitch-route/>

Just another tip to store away for when it becomes handy.
Climb safe.

NOLS Lightning Safety Guidelines

Busting myths about bursting lightning clouds

NOLS instructor wrote the book about protecting yourself from electrocution in the backcountry.

By Angus M. Thuermer Jr., Jackson Hole, Wyo.

Date: August 11, 2010

First of two parts undefined Eds.

When Brandon Oldenkamp was knocked off the Grand Teton by an electrical storm July 21, rangers had no official registry where they could add his name to those of others whose deaths are caused by lightning.

Although flashes of lightning and claps of thunder have been scaring religion into humans for thousands of years, society hasn't established a government catalog in which to list lightning-caused deaths. The group StruckByLightning.org attempts a compilation, listing 34 dead and 253 injured by lightning in 2009.

Because reports of lightning deaths are not collected by official sources, and private collations are recent, myths about how to avoid the relatively rare cause of death, and even how rare it might be, swirl through the outdoors community. Mountaineers, backpackers, golfers, boaters and others who believe in these myths can increase the threats to themselves, experts say.

From "lightning never strikes ..." to theories about a "cone of safety" beneath trees, outdoorsmen and women venture out largely in ignorance when it comes to protecting themselves from the common thunderstorm. That there were few facts on which a rambler might tailor his or her reaction to lightning irked an instructor from the National Outdoor Leadership School in Lander when he assembled a conference on wilderness risk more than a decade ago.

"One gap in information I identified was lightning safety," said John Gookin, a 29-year NOLS instructor and school curriculum manager for more than two decades. "Scientists really couldn't tell us much."

After a year of research, followed by another decade of refinements, Gookin has a pamphlet, "Backcountry Lightning Risk Management," that outlines the best strategies to avoid lightning and some of the science behind them. Key to taking action, he said, is to know what parts of lightning strikes cause the most injuries and deaths.

First, Gookin advocates avoidance.

Those outdoors can take four steps to stay away from lightning, he says in his publication. He references researcher Bill Roeder, who says each strategy is twice as important as the one that follows.

First, one should time visits to high-risk areas to synchronize with benign weather patterns. A practical application would be to summit the Grand Teton in the morning, before thunderstorms have a chance to develop.

Climbing guides adopt this practice as religion. Six Exum mountain guides ushered a dozen clients to the summit of the Grand and were out of danger by the time the July 21 storm hit.

"There is no such thing as a surprise storm," Gookin writes.

The next piece of advice is to find safer terrain at the sound of thunder. In the case of mountaineers, this commonly means going down.

On a clear day, hikers and climbers can hear thunder from lightning 10 miles away. With wind, the distance might be five miles or less. In hard rain, the audible distance may be as short as a mile.

A measure called the 30/30 rule advises to find shelter in a building when the time between a lightning flash and a thunderclap is less than 30 seconds. Once in the building, remain there for 30 minutes.

Without a building to retreat to, more caution is necessary.

The day Oldenkamp was killed, one Exum guide and his client turned back from the 13,770-foot high Grand when they were just above 12,000 feet. A guide with Jackson Hole Mountain Guides was within a few hundred feet of the summit when he and his client retreated.

All three parties that were shocked by lightning July 21 undefined 17 persons in all undefined had mulled whether they should retreat or wait to see if storms would grow worse or disperse. All reported hearing thunder before conditions worsened and they decided to go down.

Safe terrain is generally lower, as lightning tends to hit peaks and ridges. Also, lightning tends to strike more frequently on the side of a peak that the storm is approaching, so the leeward slope of the mountain is safer.

If there is a choice, it is better to descend away from a storm, Gookin advises.

Tents need to be pitched with the threat of lightning in mind. If they are higher than the ground around they can serve as conduits for a charge.

Gookin recommends having a plan to abandon a tent at night in cases when the tent is the highest point during an electrical storm.

In gently rolling hills, lightning strikes are random and elevation does not play a key role. Nevertheless, in such locations it is best to seek a dry ravine in which to find shelter.

In wide-open country, avoid higher trees or even bushes. When a storm approaches, a group should spread out with 50 feet between members to reduce the chance that several persons will be struck at the same time.

A better Load Releasable Hitch (LRH)?

Source: Rope Rescue in 2008 - Bay Area Search & Rescue - San Francisco, CA
Rigging for Rescue - British Columbia, Canada

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad x Mountaineering x
Sport Ice Other (list) Rescue scenarios

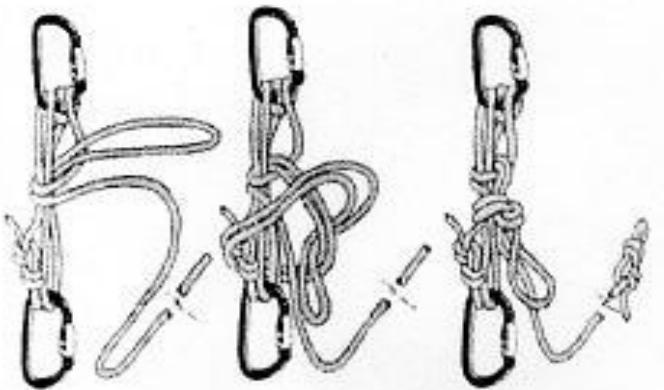
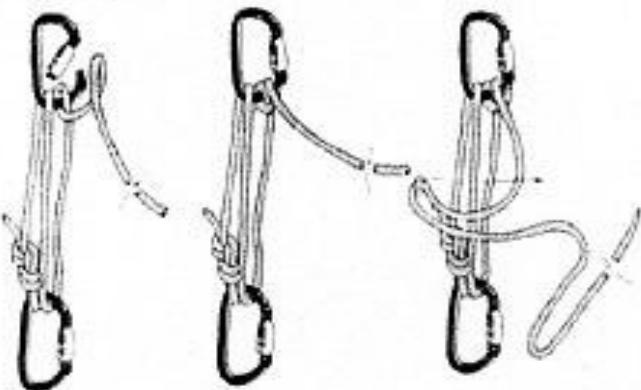
Description: There are many ways to build a Load Releasable Hitch (LRH). Probably, the two methods most familiar to and utilized by climbers are the Munter/Mule and the Mariner's knot.

The professional rescue community has concerns that go beyond most climber's needs (and they certainly have more gear than we carry), but they advocate using a LRH that might prove handy for climbers in certain situations.

Rigging for Rescue tested 31 variations of 11 different Load Releasable Hitches, and the one they recommend is the Radium Load Releasable Hitch. Basically, it still utilizes a Munter/Mule combo but incorporates either a 2:1 or 3:1 pulley system into the LRH. This could prove useful if you were releasing a heavy load and you wanted to have more control while lowering (the mechanical advantage built into the pulley system means less force applied by you in lowering).

The diagram shows a 3:1 Radium set up. A 2:1 would utilize the knot on the rope clipped into the top biner rather than the lower biner. (the first two diagrams are the more important - the last four diagrams basically show tying off the knot for "hands off" security).

The Radium Release Hitch...



What the hell is a Double Munter Hitch?

Source: AMGA Technical Handbook for Professional Guides
Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad x Mountaineering x
Sport Ice x Other (list)

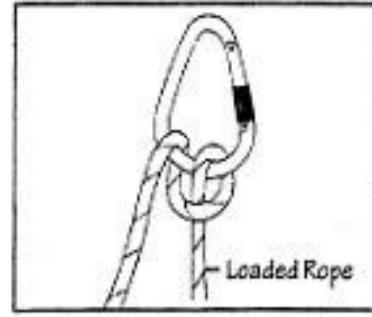
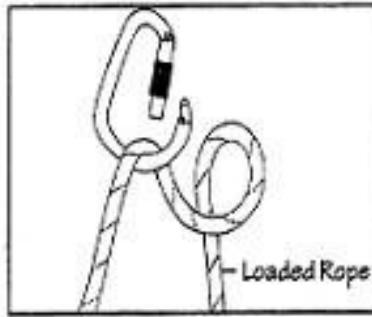
Description: In an earlier posting to this "Tips/Tricks/Gimmicks" section of the PATC website, I mentioned converting a Munter to a Double Munter hitch to increase the amount of friction for a rappel and/or a lower.

Climbing at Great Falls recently, someone asked me "What the hell is a double Munter?" Attached is a diagram showing both the Munter and the Double Munter. It will drastically increase the amount of friction that runs through the rope/biner. It can be especially useful in a rescue scenario where you might need to lower more than one person at the same time or while rappeling on a very thin or ice covered rope and you want more control managing the rope.

The Munter is infamous for putting kinks in the rope. It has been suggested (on a website) that the Double Munter does not kink the rope (i.e. first bend of the Munter bends/kinks rope and 2nd. Munter bend twists rope in opposite direction and unkinks rope). I will need to do more experimenting to verify this claim, but first time I tried it - no kinks!!

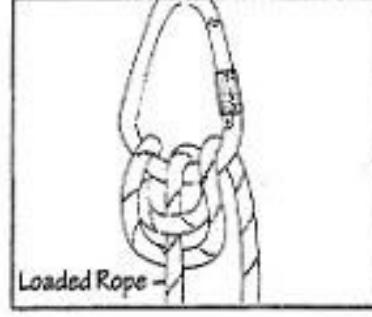
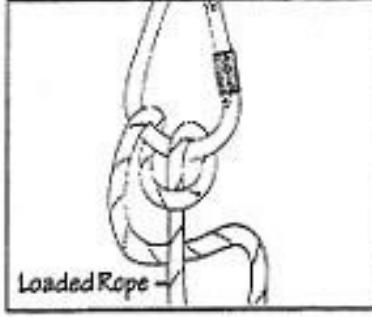
Italian Hitch (Munter hitch)

Common Uses: Belaying, Lowering low to moderate loads (one person on steep terrain, two people on low angle terrain, etc.). Reversible tie off in rescue systems (with blocking knot).



Double Italian Hitch (Double Munter Hitch)

Common Uses: Lowering moderate to heavy loads. (One person, free hanging. Two people at once on steep terrain, etc.)



Forgot your harness? You can still climb safely.

Source: Various sources:

Ontario Rock Climbing Association - Safety Manual
John Long - Learn to climb series
Handbook of Climbing - Allen Fyffe
The Mountaineering Handbook - Craig Connally

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope x Trad x Mountaineering x
Sport x Ice x Other (list)

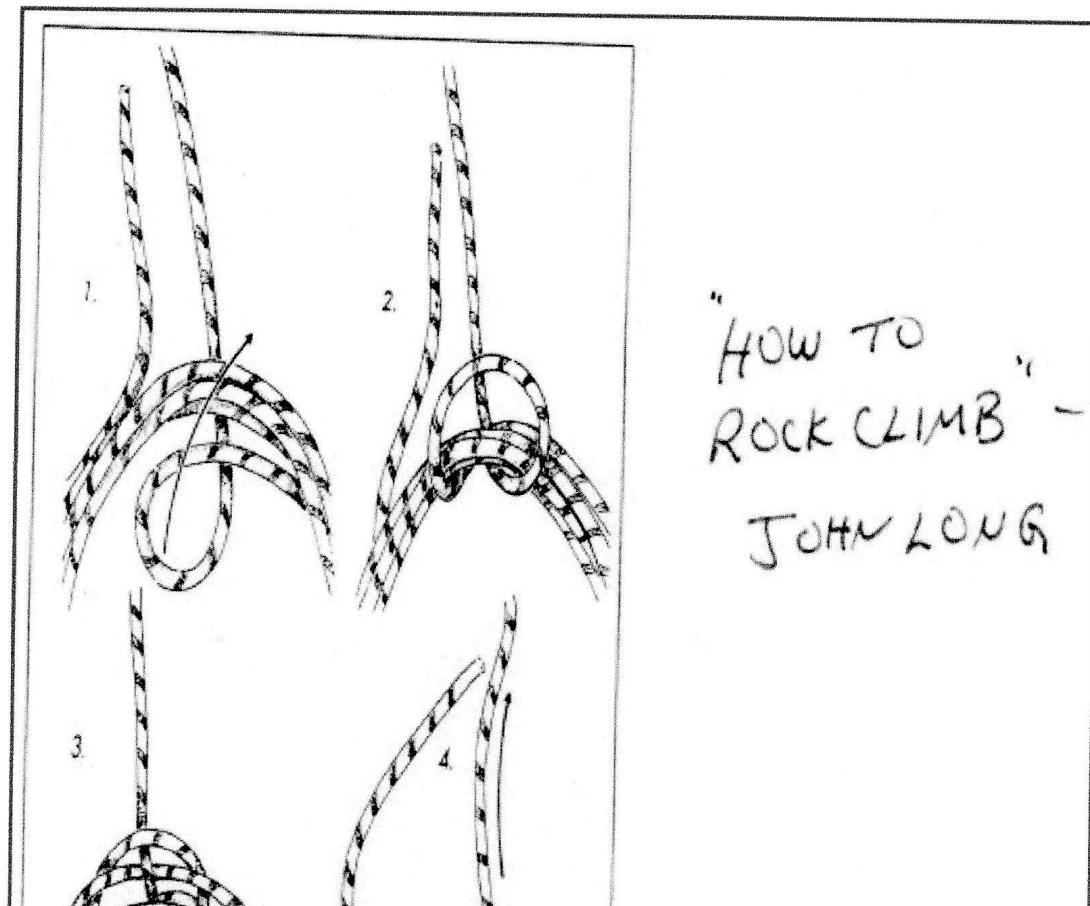
Description (limit to 200 words): I went climbing at Great Falls recently and heard some moaning from a member of our party - "Damn, I forgot to pack my harness." It happens to the best of us. Not to worry; there are ways to tie in without a harness. None of them are as comfortable (or as safe) as a harness, but you can still climb and salvage the day.

As an exercise, I showed them several different "solutions" - all with their particular pros and cons. I'm sure you can add to these "pros" and "cons" - I've only highlighted some of the main ones. There are a number of different ways to tie-in in an emergency. Here are four of the more popular/established methods.

- Easiest (and most uncomfortable) is the "old school" bowline on a coil tie in. It works, but as you can imagine not much support.

Pros - it is quick to tie in.

Cons - can be painful if you fall. Can't be used for a rappel, but you could be lowered (if somewhat painfully)



Threaded clove hitch

Source: Tom Bridge – professional guide – AAI, Seattle, Wash.

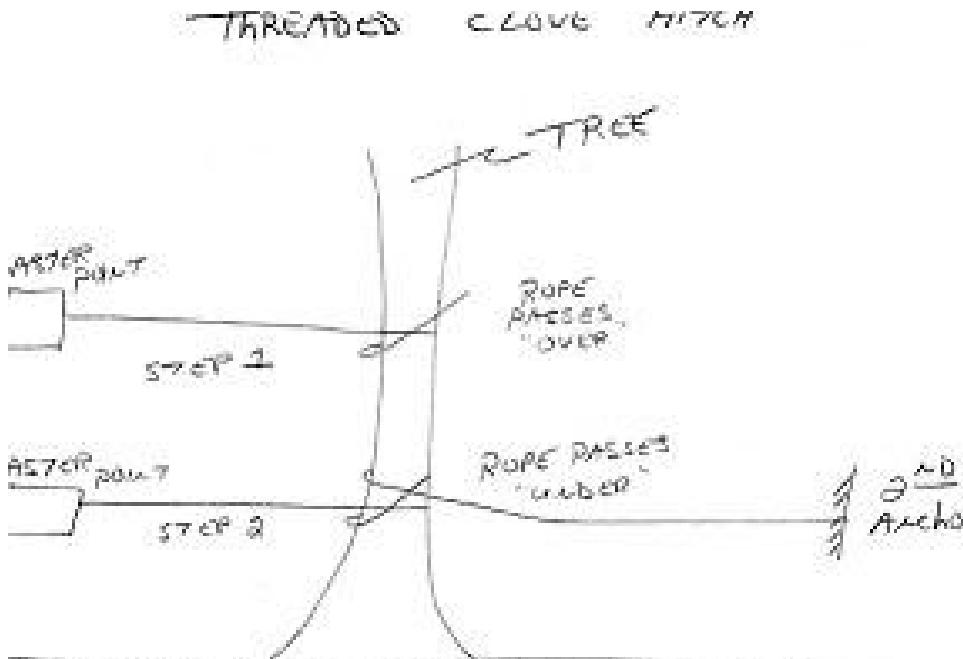
Contributed by: Marty Comiskey – martycomiskey@yahoo.com

Best useful for: Top rope X Trad X Mountaineering
Sport Ice Other (list)

Description: I learned this idea from a guide while taking a two week mountaineering course at Alpine Ascents International. Hopefully, everyone is familiar with the clove hitch. Most of the time we use it to clip the rope into a carabiner. Tom Bridge showed me how to use it to pick up a “free/second anchor” while setting up a top rope anchor using some static line. If there are multiple anchor sites (i.e. especially trees/good cracks for pro/etc.) you can connect them using only one length of static line by threading the rope around the first anchor point (i.e. tree) so that it forms a clove hitch, leaving an appropriate length of tail to reach the second anchor where you tie it with whatever knot you prefer (bowline/tensionless wrap/sling carabiner/figure 8 combo/etc. This gives you two anchors with minimal gear expended.

The threaded clove hitch is not so visually obvious so one should get comfortable playing with it first. To tie it, wrap rope around tree, pass standing end under working end, pass rope around tree a second time above first wrap passing rope under 2nd. wrap – when done it will be obvious that you have tied a clove hitch. Once familiar with this idea, you can utilize it with a cordalette while trad climbing in various anchor scenarios.

If you think this idea for collecting “Tips/Tricks and Gimmicks” has merit or if you have a thought on improving upon it, drop me a note. If you would like to pass along a tip/trick/gimmick contribution, I'd love to hear about it. You can reach me at martycomiskey@yahoo.com



Girth Hitching Cabled "Nuts"

Source : I have been aware of this idea for years; couldn't tell you where I first found out about it.

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope x Trad x Mountaineering x
Sport Ice Other (list)

Description: Have you ever slotted the "perfect" nut as a piece of pro and then found that when you clipped a carabiner to the cable, the carabiner hung right on the edge or was otherwise improperly loaded or compromised?

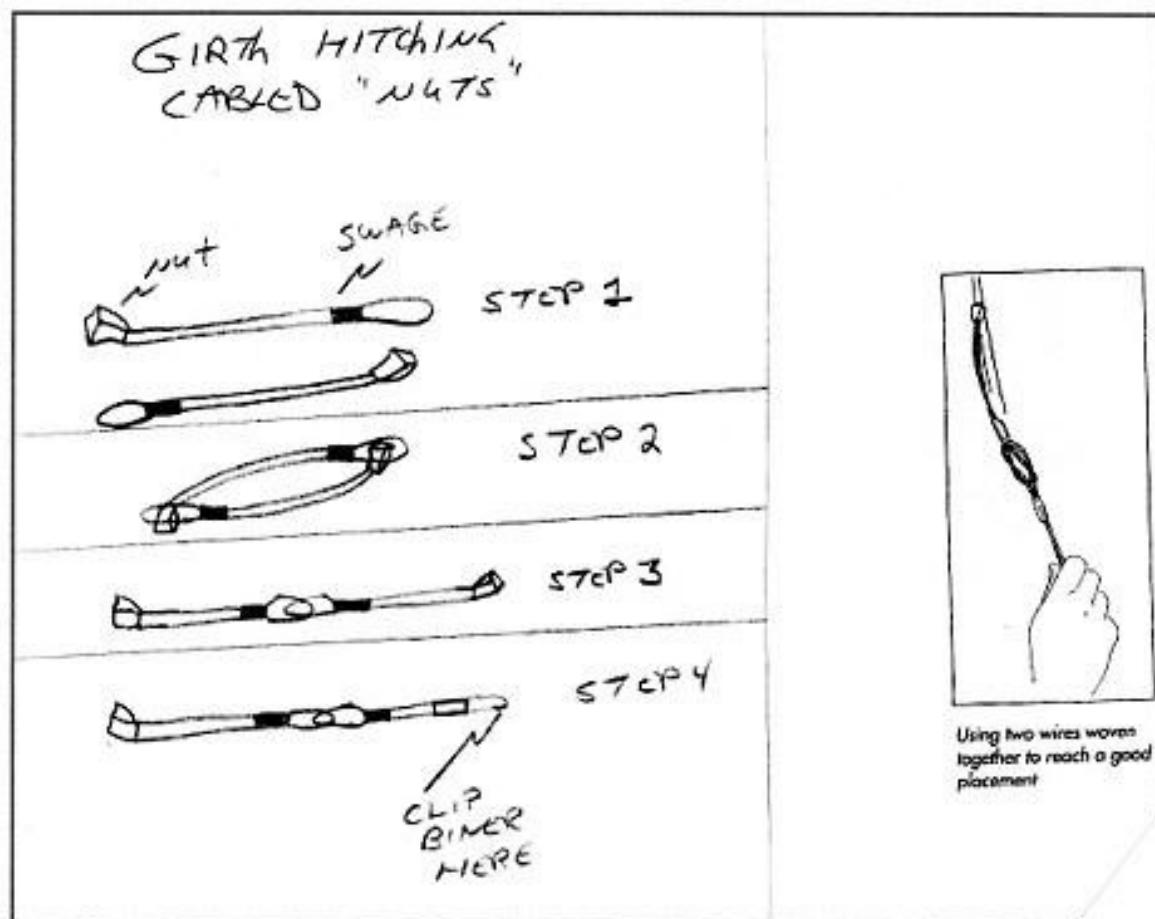
Or have you ever tried to slot a nut into a crack that was just beyond your reach? In either case, here is a remedy to extend the cable for clipping purposes or to make it longer to allow you to place it in that crack just beyond your reach.

Step 1: Place two cabled nuts one atop the other with the nuts on opposite ends.

Step 2: Pass the nuts through the swaged loops.

Step 3: Draw the two cabled nuts apart and the swagged loops will draw together into a girth hitch.

Step 4: Slide the nut you don't plan on slotting in the crack part way up the cable. This will allow space to clip the biner.



Purcell Prussik

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope: Trad: Mountaineering: Sport: Ice:

Description (limit to 200 words): In the dozen or so years that I have been seriously climbing, I have tried several systems as personal restraint lanyards (also called QAS - Quick Attachment Safety); Daisy chain, standard shoulder length sling, knotted double length sling, several girth hitched small slings (i.e. poor man's PAS) and the Metolius PAS (Personal Anchor System). Each system has its pros and cons.

Some climbers don't use any system (and that has its advantages as well). In any case, if you like to use such a system to quickly tie into an anchor while climbing (before using the climbing rope to tie in) or to attach to a rap anchor while waiting to rappel, there is another system that has gotten a lot of favorable reviews by professional rescue organizations. It is the Purcell Prussik.

I have included two pages from Tyson's book that briefly outline the system. Briefly, the Purcell Prussik (tied with 6mm or 7 mm nylon cord) is a prussik knot loop tied on itself that is girth hitched to your harness. The prussik knot allows the lanyard to be adjustable (i.e. short or longer tie in). The nylon cord unlike spectra has greater energy absorbtion characteristics and testing done by Rigging for Rescue has shown that in the event of a fall on the lanyard, the potential sliding of the prussik will also allow for energy dissipation.

In addition, the Purcell Prussik can quickly convert into a foot prussik for jumaring up the rope (if necessary) without any re-tying or modifications to the purcell prussik sling.

Also, in a pinch the nylon cord can be cut up and used for leave behind rap anchors in an emergency (a lot cheaper than leaving behind the Metolius PAS.)

CLIMBING SELF RESCUE

ANDY TYSER / MOLLY LOOMIS

THE PURCELL PRUSIK

The Purcell Prusik, developed by British Columbia's Columbia Mountain Rescue Group, is an excellent multi-use tool for improvised rescue and personal climbing application. The Purcell functions both as an adjustable tether that can be used for clipping in to an anchor (or a rappel device) and also for ascending a fixed line. It does take more cord to tie than other ascension rigs (see chapter 5, Ascending), but its multipurpose nature makes it very versatile. It can always be untied and used as a cordalette as well.

The Purcell setup consists of three different lengths of cord tied to create two separate foot Prusiks of different lengths and one waist Prusik. Here we explain how to tie a foot Purcell. In improvised rescue, just one foot Purcell can be adequate; this length can be used as a tether (aka cowstail) or as a foot Prusik for ascending. Measurements for the waist Prusik (same as the one employed in other improvised ascension rigs) are discussed in chapter 5, Ascending.

Depending on your height you will need 12–15 feet of cord.

1. Tie a figure eight on a bight, incorporating both ends of the cordelette (similar to a reef knot). The resulting smaller eight should be approximately 3 inches in diameter (figs. 4-12 and 4-13). This loop ("A" in the figures) will be attached to the rope with a Prusik for ascending or can be girth-hitched through a harness' belay loop for use as a tether.
2. With the bigger loop ("B" in the figures) create the skeleton of a three-wrap Prusik on your index finger and thumb (fig. 4-14). Wrap the cord around your fingers starting the wrap on the outside of your fingers and finishing on the inside. Move up the length of your fingers toward your fingertips.
3. Bring your fingertips together. Then slide two fingers in through the loops to facilitate step 4.
4. Thread loop "A" through the Prusik skeleton you have just created (fig. 4-15). Pull through the Prusik all but a few inches at the end.
5. Grab the two strands exiting the Prusik ("C" in fig. 4-16) and pull them directly downward. Tailor the length of your Purcell to your body by feeding slack through the Prusik, adjust the length of the figure eight if necessary. Fig. 4-17 shows a completed long Purcell Prusik.

The loop created with the Prusik hitch can be cinched down around your foot for ascension purposes or can be clipped with a carabiner when used as a tether. When used as a tether, a simple slide of the Prusik adjusts the tether's length.



Belayer's Hitch

Source: Rock Sport - Tools, Training & Techniques
for Climber's - John Forrest Gregory

Contributed by: John Gregory (gregoryj@gmail.com)

Best useful for: Top rope Trad x Mountaineering x
Sport Ice Other (list)

Description: How about the belayer's hitch, an adjustable knot that is more secure than the clove hitch, and uses one strand through the carabiner, rather than 2.

From John's book:"The Belayer's hitch - This is a single loop of adjustable anchor tie in. The figure 8 is stronger and simpler but nearly impossible to adjust. Tie as shown, adjust anchor for length, pull the top wrap down over the knot and tighten for security"

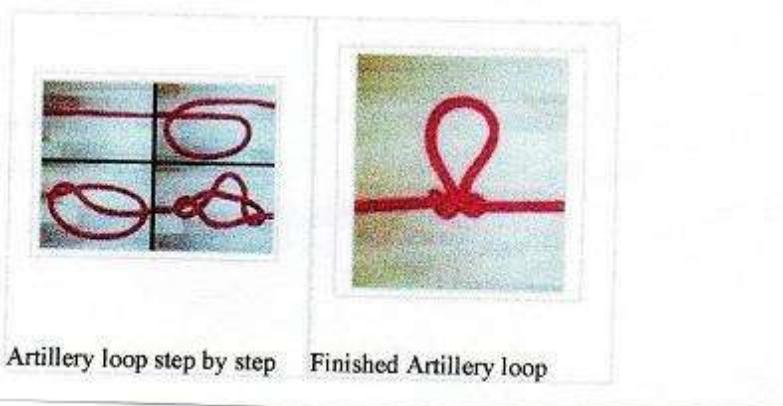
Marty C. wrote - I tried printing this picture from the preview of John's book at "Google Books" which shows the above description and picture and it would not print. Instead here is a picture/description of the knot (aka Artillery loop) from Wikipedia.

Artillery loop

From Wikipedia, the free encyclopedia

The **Artillery loop** or **harness loop** is a knot with a loop on the bight for non-critical purposes. The Artillery loop must have the loop loaded or it will slip and contract easily.

Tying the knot



Rappeling on a very thin rope

Source:"The Mountaineering Handbook" Craig Connally

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad x Mountaineering x
Sport Ice x Other (list)

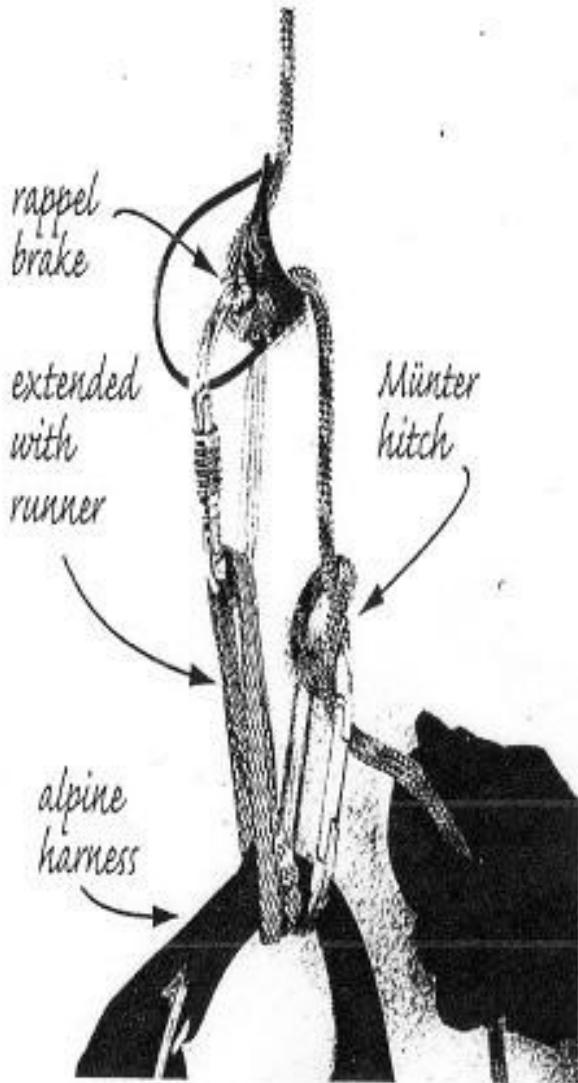
Description: This is a special case for rappeling on a very thin rope.

Craig Connally in his book, briefly mentions this tip for rappeling on a very thin rope. Perhaps you decide to bail on a route because of weather/injury and you want to rappel on one of your thin alpine ropes fixed on the anchor (i.e. single rope rappel on a 7ish mm rope).

Or perhaps, you and your partner are climbing with a "normal" sized rope (9-10ish mm) and a very thin tag line (6 or 7 mm) for double length rappels. Your partner forgets to run the rope through the rap anchors and tosses it, or just drops it while setting up the rappel. In either case, you are stranded leaving you with only the very thin tag line. The thin tag line is certainly strong enough for a rappel but managing the friction through your rappel plate (ATC or equivalent) will be difficult.

Craig's tip is as follows: extend your ATC from your belay loop with a sling. Thread the rope for a rappel as usual using the ATC. Place another locking carabiner on your belay loop and thread the rope from the ATC to this biner using a Munter hitch.

This gives you two devices absorbing the friction allowing you better control of the rappel. If you need additional control, the Munter hitch can be easily converted to a Double Munter (or Monster Munter) for even more control.



Adding a Munter hitch for extra holding power on a skinny rope.

An Alternative Way to Release an Autolocking Belay Device

Tip/Trick/Gimmick: An Alternative Way to Release an Autolocking Belay Device
 Source: "The Mountaineering Handbook" - Craig Connally

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad x Mountaineering x
 Sport Ice x Other (list) Rescue scenarios

Description: An autoblocking belay device (i.e. Petzl Reverso, BD ATC Guide) is a convenient device for belaying a second off of the anchor. On occasion it becomes necessary to "release" the device after it becomes "weighted" in order to give slack to the second for climbing purposes and/or to lower the second. If the amount of rope to be released is relatively short and/or the lower is only a small distance, the usual methods to release the device work fine (i.e. use a sling to rig a pulley/ use nut tool as a lever/ use carabiner nose as a lever).

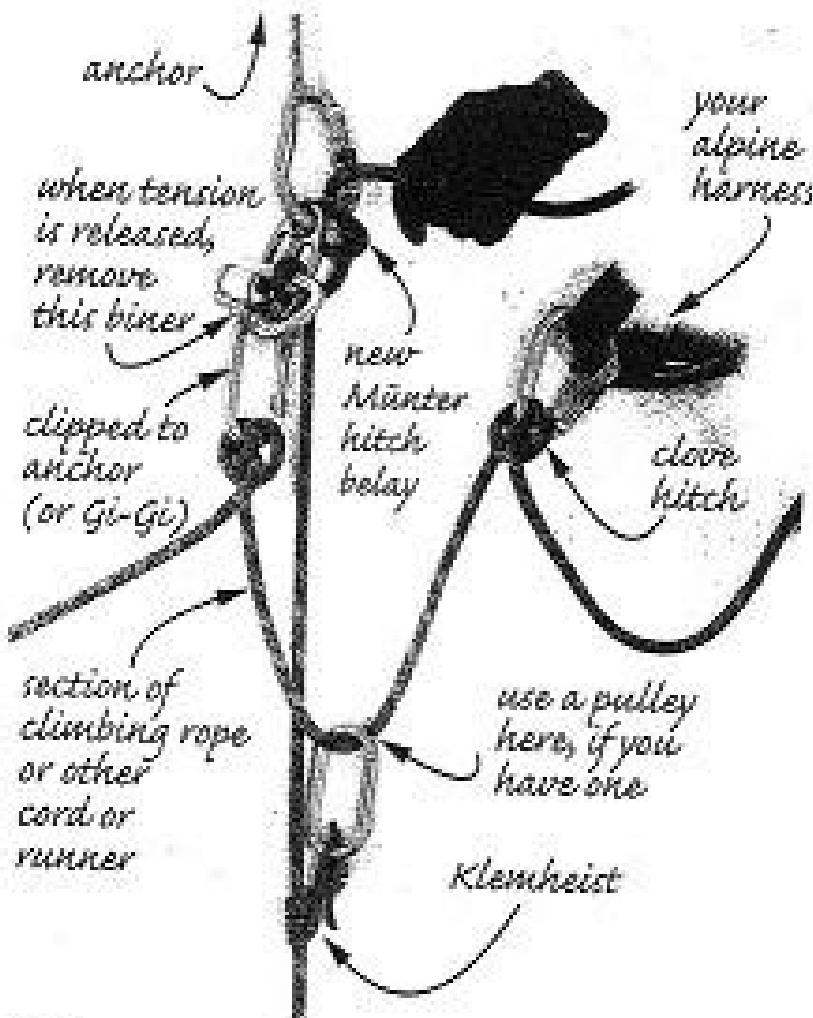
However, there may arise a scenario where you need to lower the second a full rope length to the ground due to injury or such. Using the above mentioned methods would be cumbersome and control would be problematic trying to "feather" the sling/pulley or "lever" system for a full rope length.

Craig Connally had a suggestion in his book that should be filed away in your "tool box" for such a situation. His suggestion (briefly):

- take rope coming off locked belay device and rig a Munter Hitch on a biner located above the belay device and tie it off with a Munter/mule knot
- attach a prussik knot/loop to the rope leading to the second and attach a biner
- attach a sling (or use the climbing rope) to the anchor and run it through the biner on the prussik knot and attach end of sling to your harness belay loop with a biner

- using your legs stand up from a squat, this will cause a 2:1 pulley effect on the sling applied through the prussik knot/climbing rope
- now that the belay device is "unweighted" remove belay device from rope/anchor. Squat back down putting weight back onto the climbing rope (now being supported by Munter hitch/Mule knot)
- remove prussik knot/loop from climbing rope
- untie Munter/Mule (while holding onto rope)
- lower second using Munter hitch

You can now more easily lower the second without the constant fiddling with the Reverso/lever set up. Hopefully, you will never need to do this rescue procedure, but if the occasion calls for it, it is a more workable alternative to the "standard" methods.



Releasing an autoblock brake using a section of the climbing rope.

Crevasse escape, a possible fast method.

Source (give credit where credit is due): I came across this idea in THE WORST JOURNEY IN THE WORLD by Apsley Cherry-Garrard.

Contributed by: Mike Dannhardt

Best useful for: Top rope Trad Mountaineering X
 Sport Ice Other (list)

This comes from the above book which is a narrative about the Scott's last polar expedition. At one point, a team member fell into (yet another) crevasse and he escaped by the following method:

Victim is in the crevasse, hanging in the harness, conscious and uninjured hence able to assist in their own rescue. Victim is being held by one hauler (#1). A second hauler (#2) lowers a second rope with a bowline tied in the end to the victim.

Victim places foot into the bowline loop and hauler #2 takes up slack until victim can stand on the bowline rope. Hauler #1 takes up slack until harness rope is tight and victim rests on harness again. Hauler two raises the bowline loop so that the victim can again step up and the process continues.

Seems like a good fast solution so long as the rope stretch doesn't negate upward motion. (I doubt the Scott team had dynamic ropes!).

Backed Up/Redundant Belay Loop

Source: "Old timer" at Seneca Rocks

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope x Trad x Mountaineering x
 Sport x Ice x Other (list)

Description (limit to 200 words): In 2006 Todd Skinner died while rappeling when the belay loop on his harness broke. Most of us don't worry about this, but if you do have any concerns/issues, here is a simple fix for your consideration.

Some time ago (around 1998) I saw some "old timer" at Seneca Rocks, who tied a length of 9/16" nylon webbing around his belay loop. This is not to create a 2nd. belay loop (like on one style of Metolius harness), but instead to provide a backed up/reinforced belay loop.

Using a standard water knot you can make the attach

Speeding up rappels for large groups

Source: AMGA Technical Handbook for Professional Mountain Guides

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad x Mountaineering x
 Sport Ice Other (list)

Description: This tip can be utilized to speed up the time it takes for a party of 3 (or more) to rappel. It can also be used to allow you to safely backup a rappel with a belay/lower.

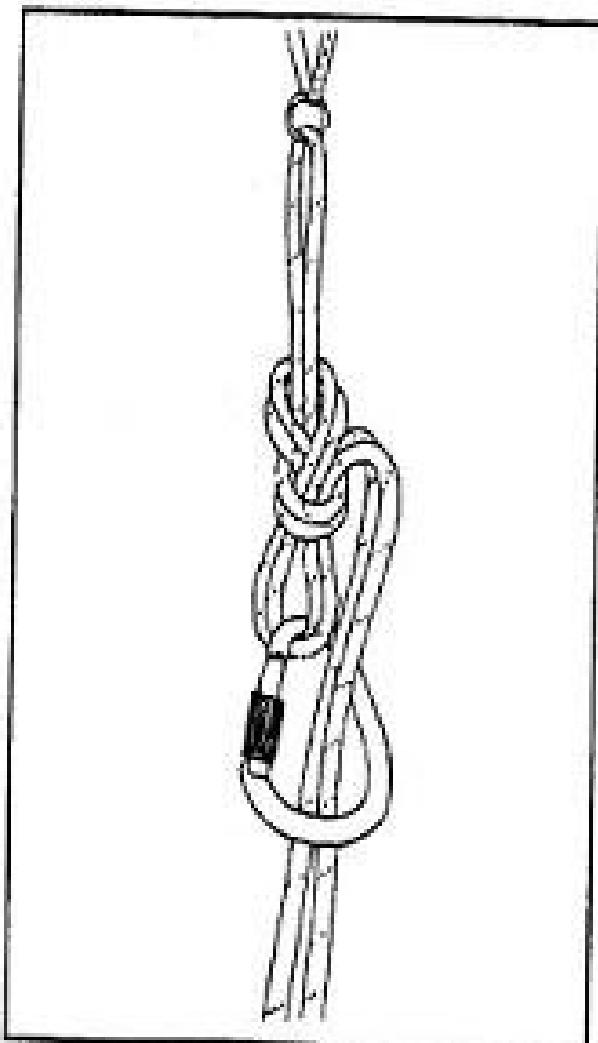
This tip requires you to have total confidence in your rappel anchor as it will be stressed with the weight of two people rappeling rather than one (not an especially demanding requirement as most of us will rappel off of "trade routes" with established strong rappel anchors, but it is something you should be aware of.)

I came across this tip (in the knot section) in the AMGA Technical Handbook and it utilizes a "slippery figure 8" knot tied at the rappel anchor. Using this knot/biner combination basically turns a double rope used for a rappel into two fixed single ropes.

In a party of three (or 5), if pressed for time because of approaching darkness or bad weather, the first two people could rappel at the same time, each on a separate fixed line. After the 1st. and 2nd. persons arrive at end of rappel, the third person would remove the biner, pull the slippery 8 free and do a "normal" double rope rappel.

You could also use this "tip" in the event you wanted to back up a "newbie" on rappel with a belay/lower because they were nervous and needed some reassurance. The "newbie" would rappel on one of the fixed lines; the other fixed line would be tied into their harness and then connected to your belay device so that while they were rappeling you could keep them on belay.

This is not something you would use all the time, but potentially it could be a time saver or a safety technique worth knowing.



Slippery Figure 8
Common Uses: Creating two separate strands from a single threaded rope in rappelling scenarios.

Using a "Gear Belt" for trad climbing

Tip/Trick/Gimmick: Using a "Gear Belt" for trad climbing

Source : this one is my idea (I think)

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad x Mountaineering
 Sport Ice Other (list)

Description: As you know, there are two usually accepted methods for racking gear/pro when trad climbing:
- gear sling over shoulder (and the numerous variations - regular sling, dedicated gear loop sling, incorporated backpack/gear sling, other)
and,
- rack gear on your personal climbing harness

Each system has its pros and cons. If swapping leads (i.e. each member alternates leading) then sharing an over the shoulder sling and swapping it at the belays is very efficient as compared to transferring each piece of pro individually from your harness to your partner's harness.

However, certain climbs/routes (or personal preference) favor using your harness to rack the gear. It is especially troublesome using an over the shoulder gear sling if your shoulder (and the gear sling) are jammed into an off width/chimney.

If only one of the climbers is doing all the leading, then this becomes a moot point; just do what works best for you. But, if you are swinging leads and would prefer to rack on your harness here is an idea that I have recently been experimenting with.

I recently retired an "old" harness. Rather than throw it away, I instead cut off the leg loops, belay loop and such leaving only the "belt" with its attached gear loops. I wear this above my climbing harness and when swapping leads I can easily remove the gear belt with its attached gear and pass it along to my partner in one step - a great time saver.

Using the Climbing Rope to Construct a "Webolette" Belay Anchor

Tip/Trick/Gimmick: Using the climbing rope to construct a "Webolette" type belay anchor

Source: Not sure

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad x Mountaineering x
Sport Ice x Other (list)

Description: At the recent "Leader's Skill Day" at Carderock on 4/10/10 while taking a lunch break, we spent some time (at a participant's request) constructing different belay anchors using various schemes.

One system that I demonstrated used the climbing rope to construct a "webolette" type anchor.

It's advantages include:

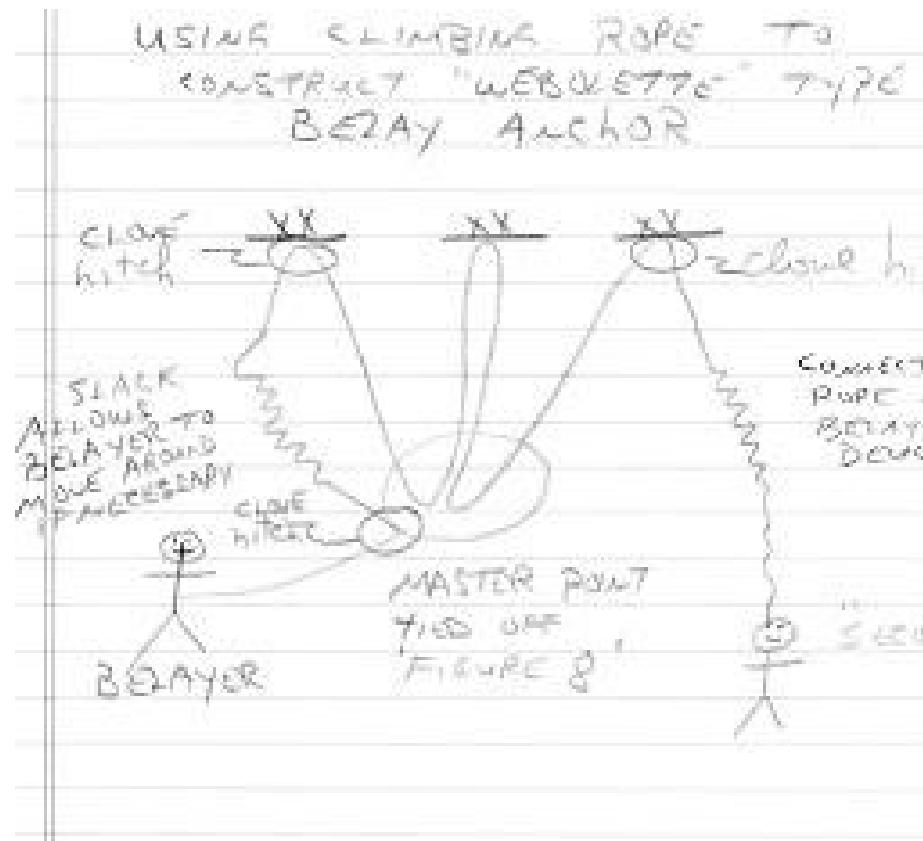
- fast to build
- fast to break down after use
- super strong (uses the climbing rope vs. 7 mm cord or thin webbing)
- more dynamic/elastic (uses large diameter stretchy climbing rope)
- no dedicated cordalette or webolette to carry
- more flexible than using standard length (~20 foot) cordalette as much more rope available to reach/connect distant pro/anchors

Disadvantages include:

- requires climbing rope that may be needed for next pitch
- not efficient if not swapping leads, as "tie in" at harness may need to be untied/retied swapping ends of rope.

This is just one of many different ways to construct a belay anchor. If you find this of value/interest, file it away in your "tool box."

A very crude diagram is attached showing rigging of this anchor scheme.



Preventing Rope Tangles During Rappels

Hello All,

Sometimes you find yourself having to make rappels on slabby and/or vegetated terrain. Trying to throw out the rope under these circumstances results in lots of time wasted untangling the rope when the first person comes down.

To prevent this situation, I like to stack my rope ends in either one or two bags. These bags, which can be rope bags, stuff sacks, or even a small climbing backpack, are clipped to my harness on the either the right or left side depending upon if you are right-handed or left handed. As you rappel the rope will feed out of the bag, but will not be tangled by the terrain.

It is important to stuff the rope so that it freely feeds out, but this is rarely a problem. This situation also works well in blocky terrain where you do not want the rope to be caught in the wrong area if you tossed the rope end. Just remember to always knot the end of the rope with a stopper knot and be aware of how much rope is left in the bag when making unknown rappels.

Mark Fletcher

Using a Munter "Pop" to Pass a Knot while Rappelling or Lowering

Source: "Climbing Self Rescue" - Andy Tyson/Molly Loomis

Mountainproject.com - RGGold (Richard Goldstone)

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad X Mountaineering X
Sport Ice X Other (list)

Here is a tip for those (hopefully) rare occasions when you may need to pass a knot that is joining two ropes together for either a rappel or lowering scenario.

This may need to be done, if and when you deem prudent, to bail from a route either because of approaching storm, injury or some other rescue scenario. For example, your partner is injured and unable to safely rappel by themselves and you want/need to lower/rappel two full rope lengths.

This Munter "pop" technique requires minimal gear and requires little manipulation of rope/knot/gear at the "knot/rope" interface. To use the Munter "pop" you must have the Munter loaded from both directions. You must have a load hanging from the Munter and the brake strand must be fully loaded and tied off as well.

I've included a photo from the Tyson/Loomis book "Self Rescue" showing the lowering setup and a crude diagram that I drew showing the rappelling setup derived from the RGGold description on mountainproject.com.

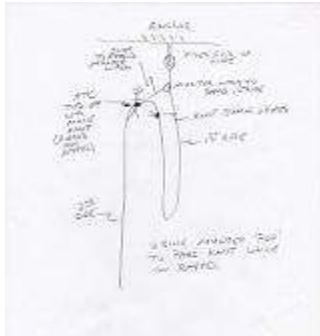


In both cases, one uses a Munter Hitch connected to a sling (attached either at the anchor for lowering or on the harness when rappelling).

The extended Munter on a sling allows you to remove the loaded Munter Hitch easily from the system when the knot is encountered.

RGold's description (for rappelling) follows:

"The Munter pop is the simplest, least gear-intensive way to rappel past a knot. You install your usual rap device on the rope below the knot; clip the device to your harness (this folds the top portion of the rope in half at the start of the rappel) and tie it off with a load-releasable knot (Munter Mule or ATC-Mule)."



On the rope above the knot, install a Munter on a sling extending the Munter/biner from the harness. The extension lets your harness point get below the knot when you arrive there, at which point you begin to weight the tied-off rap device below the knot. Pop the still weighted Munter off the rope above the knot, release the tied off rap device below the knot and continue rappelling."

This is not an everyday technique you will use on a regular basis. It is just "another tool" in your arsenal that you can call upon when the situation/scenario calls for it.

10 Lightning Tips for Climbers - Stay Safe from Lightning While Climbing

After the tragedy in the Tetons I found this article useful:

<http://climbing.about.com/od/staysafeclimbing/a/10TipLightClimb.htm>

If you're out climbing on the rocks or in the mountains and a thunderstorm sweeps in, you're in a dangerous situation since you're probably in an open exposed place like a ridge, cliff-top, or summit. Follow these 10 tips for climbers to minimize your risk and stay safe from lightning when you're caught in the storm.

1. Quickly descend to a lower elevation.

Descend and find a less exposed place. It's best if you're away from the direction of the approaching thunderstorm.

2. Don't be the tallest object around.

Don't stand in open areas. Instead take shelter in a thick forest and avoid taking cover beneath isolated trees or a tree that is taller than nearby trees. If there are no trees around, hunker down in a depression and squat. Don't lay down on the ground.

3. Keep away from objects that conduct electricity.

These include water, metal objects like climbing equipment, metal fences, and power lines. Take off any pack with an internal or external metal frame and hang all metal climbing gear well away from you.

4. Wet ropes can carry current.

A wet rope also makes a perfect electrical conductor. In a bad storm, consider untying any wet rope from you. If lightning strikes above, the current can pass down the rope and zap you.

5. Squat or kneel down.

It's best if you use a sleeping pad, empty pack, climbing rope, or anything else that will insulate you from the ground. Put your feet close together so you will have less contact with the ground and reduce danger from ground currents. Do not lie flat on the ground because strike currents can easily travel through your vital organs.

6. Spread your group out.

Spread your group out (a minimum of 15 feet) so that if there is a strike there will be team members available to give first aid assistance.

7. Don't hide in small caves or under overhangs.

Sitting under an overhang or in a small cave is asking for trouble since lightning will jump the gap from top to bottom by passing through you. I had a friend killed by lightning on Pikes Peak when he sat under a boulder overhang above timberline to wait out a storm.

8. Move to either side of cracks.

If you're climbing and a lightning storm comes, move away from vertical crack systems whenever possible. Lightning currents travel down cracks.

9. Avoid rappelling in lightning storms.

Rappelling in lightning storms should be avoided if at all possible. Currents from a cliff-top strike can travel down your wet rope, zapping you. Sometimes, however, rappelling might be the fastest way to reach safety so you might need to take a calculated risk by rappelling...and keeping your fingers crossed!

10. Don't lie down on ledges.

If you're on a cliff in a lightning storm, don't lie down on a ledge or sit with your back against the vertical wall since current can pass through you. Instead try to sit or crouch, preferably on insulation like a rope, on the outside edge of the ledge. Also tie in crosswise so you don't fall off if struck and keep the rope from under your armpits.

Reasons To Learn Basic Aid Climbing

Hello All,

Although most people are now free-climbing everything, I would encourage all lead climbers to learn basic aid climbing for the following reasons:

- 1) If you are learning trad climbing, aid climbing will really teach you how to make proper placements of protection. You will know right away whether it will hold or not instead of waiting until an unplanned fall to find out whether or not it will hold. If you properly test each protection piece, you will not fall at all or the fall will be extremely short.
- 2) Aid climbing will allow you to improvise to get through a hard spot when you really have to, i.e., in alpine climbing when getting to the top is more important than style, a storm is approaching, an emergency situation, etc.
- 3) In an emergency situation where the leader has fallen on a climb that is above your free-leading capabilities or you need to ascend to a leader who is having problems - everyone should know the prussik knot and how to make an ascending system.

Aid climbing is really about improvising - the etriers (sling ladders) can be made by girth hitching several 24" sewn slings together and putting a knot halfway in between. Or if you happen to have 12" sewn slings, just girth hitch a few of them together. What if you do not have anything but webbing, but need to make emergency etriers? If you study the "Basic Rockcraft" book by Royal Robbins (although dated, everyone should read this book), it shows you how to make etriers out of webbing.

In certain circumstances knotted webbing or slings can become protection nuts. You can also use carabiners as protection nuts in some situations.

Aid climbing is not just used on big walls. It is used in sport climbs, trad climbs, ice climbing, etc. It is a valuable set of skills to know even if your intention is to free climb regardless of the type of climbing.

Mark Fletcher

Abrasion Resistance of Webbing

RE: Abrasion Resistance of Webbing – A Good Choice for Top Rope Anchors? - Marty Comiskey

Recently, a PATC member e-mailed me inquiring about the use/wisdom of webbing to construct top rope anchors vs. using static line.

Unlike trad anchors, that are used for only a short while (i.e. one/two climbers-one, maybe two pitches) and are closely located near the belayer and (hopefully) closely monitored and quite often, assuming no falls, not loaded/stressed, top rope anchors are often set up and used continuously for several hours, are used by a multitude of climbers and even with no falls are loaded/stressed when the climbers are lowered to the ground.

As such, top rope anchors need to be not only strong, but especially redundant and secure as they go unmonitored for several hours. That is why we have redundant anchors, redundant masterpoints and redundant carabiners. Since these top rope anchors are out of sight for potentially the whole day, we need to be worry free as to friction/wear on the rope/webbing, possible cross loading of the biners, etc.

Assuming bomber pro, anchors (top rope or otherwise) don't usually fail because the loads on the static rope or webbing exceed their strength rating. If/when they fail; rather they tend to fail because of abrasion across the rock/cutting and/or rock fall onto the rope/webbing.

If this is the case, then how does webbing compare to static line as to its resistance to abrasion (i.e. cutting) and the wisdom to choose it as anchor material.

Webbing has some advantages over static line:

- Cheaper
- Less bulk
- Less weight

It also has some disadvantages:

- Lower abrasion resistance as compared to static line
- Webbing knots used (i.e. water knot) are not as readily adjustable as rope knots (i.e. bowline)

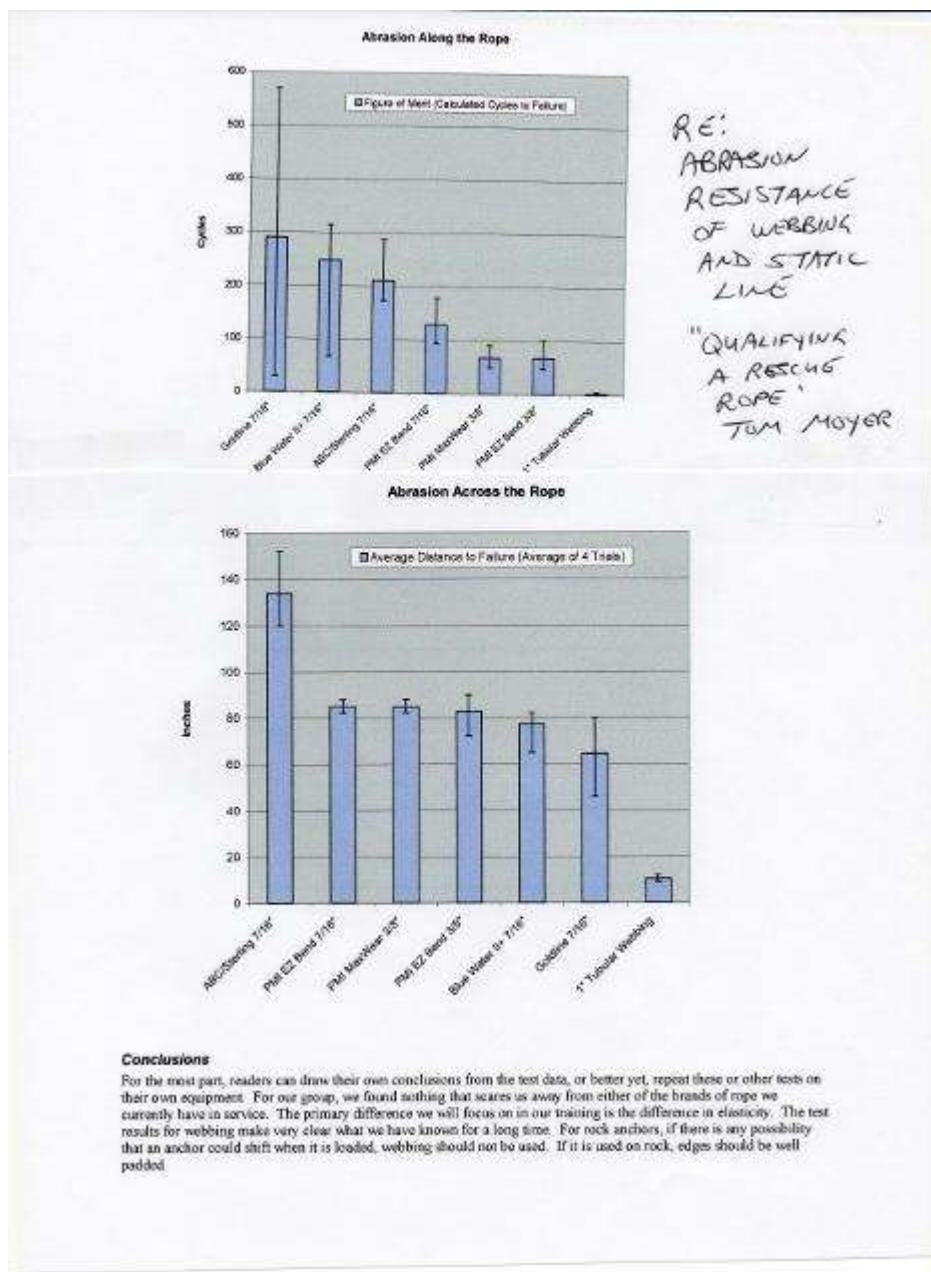
Tom Moyer, SLC Search and Rescue, conducted a little test/experiment some years ago to answer this question. His complete report (Qualifying a Rescue Rope) can be downloaded from his website:

www.xmission.com/~tmoyer/testing

I have included two of the more relevant graphs from his report. Tom Moyer tried to quantify how webbing compared to static line in resisting abrasion both along the rope/webbing (i.e. vertical friction against rock) and across the rope/webbing (i.e. horizontal friction against the rock).

His conclusion: if there is any possibility of movement of the anchor material, then webbing is a poor choice for anchor material. Webbing can be used to extend an anchor from a distant tree to the rock edge, but the webbing should not extend over the cliff without padding.

Interestingly, I have seen many people use webbing to encase their static line to protect it against abrasion, but do nothing to protect their webbing against abrasion, and it is much more prone to cutting than static line. Climb safe.



When is it Time to Retire a Lead Rope?

When is it time to "Retire" a Lead Rope?? - Marty Comiskey

I've been climbing seriously for about 15 years and I have heard/seen this question asked many times; but never a definitive answer. Usually, the "official" answer by the rope manufacturer is something along the lines of:

- casual use - several years
- moderate use - 2-3 years
- severe use - one year

As I said, not a clear/precise answer. I was recently looking at the Mammut website (Swiss manufacturer of ropes and other climbing gear) and found an "off the cuff" comment about maintaining a rope log that had an equation for calculating the life of a rope (I would really like to know where/how they derived this equation).

In any event, here is the description as printed in their rope technical manual:

"Of particular use for commercial ropes. A rope log simplifies the maintaining of the usage history of the rope. The entries include the number of days used, the number of meters climbed (multiplied by 0.33) and the rappelling, lowering or top roping meters (multiplied by 1.66). From this, the total usage meters can be calculated. Ropes with 5-7 standard falls can usually be used for about 1500-5000 meters, those with 7-9 standard falls 5000-10,000 meters, and those with more than 9 standard falls 10,000-20,000 meters."

I did a few calculations, first assuming I never rappelled and was able to walk off the route. To further simplify the problem, I assumed the average pitch was 100 ft. long (obviously, some shorter, some longer).

- thin rope (5-7 falls) - life of rope 1500-5000 meters (4920-16,400 ft.) divided by 0.33 divided by 100 ft = approx. 150 to 500 pitches (at 100ft/pitch)

- moderate rope (7-9 falls) - 5,000- 10,000 meters (16,400-32,800 ft.) divided by 0.33 divided by 100 ft. = approx. 500 pitches to 1000 pitches

- heaviest rope (9+ falls) - 10,000-20,000 m (32,800-65,600 ft) divided by .033 divided by 100 ft. = 1,000 to 2,000 pitches

Mammut also makes this statement in their rope manual regarding rappelling and lowering:

"Rappelling reduces the life span of a rope by a factor of 2 to 3 compared to normal climbing. Lowering and top roping accelerates ageing by a factor of 5 to 10."

So let's re-do the calculations for worst case scenario (every route climbed is rappelled). For example: 1000 ft. climbed and then 1000 ft. rappelled would translate using the Mammut equations as:

1000 ft. x .33 plus 1000 ft. x 1.66 = 330 ft. plus 1660 ft. = 2000 ft. total rope usage.

- thin rope - approx. 25 to 80 pitches (at 100ft/pitch)

- moderate rope - 80 to 160 pitches

- heavy rope - 160 to 320 pitches

Since we don't always rappel as many pitches as we climb, our projected rope life is going to be somewhere between these two extremes.

I wonder, "How many of us maintain a rope log?" Well, now you know when to retire a rope. The answer is "it depends."

Belaying from the Top while Toproping

Source various sources

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope X Trad Mountaineering
Sport Ice Other (list)

Last week a group of PATC members (~10-12) got together to climb at Great Falls, Va. The river was still running high and most of the bottom areas of the cliffs were still underwater. Rather than calling the day a bust, we decided to climb, but we would lower climbers, from the top, down the cliff and then bring them up belaying from the top.

For some of the PATC climbers this was a new experience and as such we saw various inefficient (and potentially unsafe) practices:

- some established their masterpoints below the cliff edge as if they were setting up a normal slingshot top rope system (makes setting up the belay anchor/stance difficult)
- some tried to set up their belay devices in Guide mode (works fine for bringing up the climber, but not very efficient for lowering the climber)
- some tried to lower climbers directly off their belay device at their harness (not the most comfortable set up)

- some belayers failed to "tie in" to anchor (often OK when belaying from bottom, but not advisable when belaying from top)
- some tried to lower climbers with load strand re-directed through a high masterpoint, but failed to use a backup (i.e. lose control of belay and climber being lowered falls to bottom)

Some of the more experienced climbers very quickly gave some critique/lessons on how to better set up these top rope systems.

The consensus of opinion that day seemed to be:

- belaying from the top for top roping is similar to the anchor/belaying system as if you were bringing up a second in a trad climb. The obvious difference being that we first had to lower the climber before we could belay them.
- As such, you would be better served if your masterpoint was situated at chest level or higher and situated above the cliff edge
- Using a Reverso or BD Guide in guide mode is not always a good idea - lowering the climber is often difficult. It is workable, but often awkward and "rope system" dependent; not something that you would want to do all day long.
- Using a Munter hitch to both lower and belay the climber is very efficient and was the method most of us used that day (we are assuming here that one does not have a Grigri or similar device available which would work if a redirect is used)
- if using the Munter hitch off the masterpoint it is imperative that a back up be used. This is analogous to using a back up friction knot while rappelling. One can use an autoblock or a prussik/friction type knot below the Munter hitch and attached to the belayer's harness to protect the climber being lowered in the event the belayer loses control of the belay strand.
- the belayer should be tied into the anchor with either the rope or a sling/PAS (this is to protect both the belayer and the climber)

One other advantage to belaying from the top as opposed to being at the bottom is that all the belayers were in the shade and quite comfortable on this hot day. Usually, the belayer is down at the bottom in the sun and heat.

Climb safe.

P.S. following suggestion was forwarded by Bill Dudley - i.e. get the best of both worlds - lower with Munter and belay with ATC in guide mode:

"I like lowering with a munter and backup. When I am with friends I know that I'm sure can get back up, I'll just belay them back up with a munter, but if I'm not sure of their climbing ability, I'll lower them down with a munter and when they get to the bottom and unweight for a second, I'll put my ATC guide in autoblock mode on the brake strand of the munter and then take the munter out, belaying them in normal ATC guide autoblock mode. Going to a 3:1 haul system to help them through a crux is a 30 second fix off this setup and I like to be able to convert to it seamlessly; going to a 3:1 off a munter really takes a bit more time."

Climbing with Hearing Loss

Christina Cox

Climbing with hearing loss should not be a deterrent or a safety hazard. These tips are not only for those with hearing loss. Often times, hearing people find themselves in hard-to-hear situations in the mountains.

The most important consideration in regards to communication is to keep things simple and maintain eye contact. Establish visual contact whenever possible and avoid situations (if possible) where visual contact is limited. The tips in this guide are designed to minimize frustrations, which are a safety hazard.

"As long as team members communicate climbing strategies in depth beforehand, use signs when in eyesight, or another method (such as radios or rope tugging) when out of eye and ear site, they do well together. The key is knowing our partners and being receptive to each other, whatever the method." -Erin McLaughlin, deaf climber

Tips, Techniques, and Tricks:

1. Communicate with ALL of the trip members PRIOR to the trip the degree of your hearing loss and what to expect in terms of your hearing range in various types of situations.
2. For alpine situations with hearing aids: Wear your old hearing aids on the mountain. Wrap your good ones in a Smartwool beanie (or something similar) for warmth and store them inside a dry bag if you must bring them up with you on summit day. If you don't have spare hearing aids, consider taking your hearing aids out at tree line if

you don't luck out with "good" weather so you will have functioning hearing aids when you descend. You should already have pre-determined hand/body signals for communication before hand.

3. Determine communication plans with your team before you starting the event the hearing aids freeze, battery dies, or if you can't hear. Hand signals, body signals, whatever works for you and your team. I rely on American Sign Language
4. Body language is useful and very effective (i.e. nodding one's head up and down to indicate all was good or understood, thumbs up, thumbs down, pointing at me, pointing at someone and other basic infantry signals)
5. Use your visual sense to compensate for your hearing loss by being extra diligent of your environment. Know the route, alternatives and potential obstacles. Mind your surroundings, individually and collectively. Study a map and know how to use it.
6. Communicate with your team BEFORE the trip to be diligent on eye contact with you!
7. Make sure you know what's happening with the route before starting. Get the complicated instructions out of the way while you are in a safe environment where you can communicate well.
8. When roping up with new rope teams, be in the middle to get a general sense of communication dynamics.
9. If hearing a little bit is an option, one-worded verbal communication is the most effective regardless whether it was between your self and a person or one of the others in the groups communicating a climbing command to another person.
10. One word communication is easier to understand on radios, if using them.
11. It's fair, polite, and safe for you to be included in all communications, whether it be one word commands or visual commands, between either yourself and a team member or other communications not involving you. Insist on this BEFORE the trip to prevent frustrations. Remember, **frustration is a safety hazard**.
12. Ask that your group be specific and clear with whom you/they are communicating with. Request that team members say or sign your name first to be sure he/she is talking to you and not anyone else. This is especially important if you are busy with a task at hand.
13. Pick rope team members who are patient and understanding!
14. Not to be relied on due to erratic cell coverage, but sometimes when rock climbing it is possible to use text messaging belay commands. (Not recommended, but this has been done before in the Gunks).
15. If you wear hearing aids, be mindful of alpine critters that may be attracted to the scent of ear wax on hearing aid ear molds. My hearing aids have been stolen by a curious chipmunk.
16. If you do wear behind-the-ear hearing aids, consider buying "Ear Gear" protection: <http://www.gearforears.com/>

Simple hand signals for belay commands

Jason and I came up with simple signs for certain terms (such as take or slack) that can be seen from a distance by the belayer while the climber only has to use one hand. The "take" sign resembles that of pulling down your fist (as truck drivers usually do when they sound their horns). We initially had a sign for "slack" which resembled jazz hands (five fingers out and shaking the hand) from the climber's hip area, but eventually ended up using a different sign which is pointing the finger down and moving it in a circling motion (as in circling the rope- "give me slack"). - *Erin McLaughlin, deaf climber*

When the leader is on much higher ground in an alpine situation:

"The times when verbal communication was least reliable were situations when whomever was leading was on much higher ground. Wind and continuous falling snow obviously made things a little more challenging. Paul(a guide in the White Mountains) stressed his general preference (through his experience) to advance up the slope and place the next anchor strategically where he would still be able to have visual contact with the rest of the climbing team." -*Christopher Cabacar, hard of hearing climber*

Climbing Multi-Pitch Rock using Rope Tug Commands (no digital communication devices)

This is how one team does it in a situation where the leader cannot hear or see the second: -*Jason Zodda*

"Naturally, before we tie in, I talk to my second and discuss where the next anchor is, talk about places where the rope may snag, where to use extra long runners, if we will simul-climb, and etc. After that, the first thing I do is tie in on one end of the rope and have my second tie in at the other end of the rope (we are now attached end-to-end). After we check each other, I climb to the anchor. I then make an anchor and secure myself to the anchor (I am off belay at this point but do not need to tell my partner--he/she is still keeping me on belay). If my partner can hear me, then she/he can take me off belay, but this is not necessary, there is nothing wrong with my partner keeping me on belay. Next, I pull up all the slack. When I run out of slack, I put my second on belay. Only then do I do the rope tugs: 3 or 4 hard tugs (I used to always do three for "on Belay", but now add an extra one just in case the follower didn't feel the first one). When my second feels the tugs, then he/she knows that he/she is on belay and can start climbing. I continually take up slack as the second climbs until he/she reaches the anchor. In this system, there is only one communication, from the leader to the follower and it simply informs the follower that he/she is on belay. The second never has to tug the rope(although I know some systems do incorporate such a communication). The tugs only happen after the leader 1) makes an anchor and secures himself to it; 2)pulls up all the slack; and 3) puts the second on belay."

Now there are some dangers to the rope communication method. The most common is if the rope gets stuck. If that happens, then I am tugging on the rope, but the second will not feel it. The best way to avoid this is to make sure you lead well and don't just clip in and place gear willy nilly, ensure that you are leading smoothly and placing the rope away from rope-eating rock. Another problem is pulling the rope could dislodge a rock, possibly injuring your second. Again, the best way to avoid this is good rope management as you lead (easier said than done, I know)."

A More Efficient 3:1 Pulley System?

Tip/Trick/Gimmick: A More Efficient 3:1 Pulley System ?

Source: Ontario Rock Climbing Association - Safety Manual
Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad x Mountaineering x
Sport x Ice x Other (list)

Description (limit to 200 words): At the recent "Leader's SKill Day" at Carderock, Md. on 4/10/10 we showed PATC members how to construct a 3:1 pulley system in the event they needed to help/aid a stuck "second" having trouble on the crux.

With any system there are pros and cons. Using the relatively simple to set up "3:1 'Z' Pulley System" here are some of its advantages and disadvantages:

Pros - simple to set up, quick to break down

Cons - lots of friction at Reverso/BD Mountain Guide ATC/belay device

- need to 'pull up' (inefficient)

- if rigged with re-direct to allow 'pulling down', system introduces more friction and reduced mechanical advantage

At "Leader's Skill Day" I briefly demonstrated an alternative pulley system that some found interesting (and I promised participants I would send out this write up). I found this pulley system in the "Ontario Rock Climbing Association - Safety Manual." They called it an "Inverted Piggyback Pulley System." It is a variation of the Spanish Burton pulley system.

The Inverted Piggyback system's advantages include:

- bypass high friction at Reverso without losing its locking capability

- allows a "pull down" without the addition of more pulleys and reduced mechanical advantage

Disadvantages include:

- it is more complicated to set up than the "Z Pulley system."

- there is more rope management involved (i.e. slack in climbing rope at Reverso)

The Inverted Piggyback system can be set up using a separate length of cord (i.e. cordalette) or a section of the climbing rope. As one pulls down on the Inverted Piggyback pulley system, slack will develop in the climbing rope at the Reverso. This slack must be pulled through the Reverso while holding the pulley line tight to assure proper belay of "second." This is a bit cumbersome, but more than worth it for the improved efficiency of the pulley system.

I have included a diagram from the Ontario Safety Manual showing this set up. Take note that this book was written (~1990) before the invention of the Reverso and their diagram shows an old style locking belay rig.

Combination Cordalette/Webolette - its two tools in one.

Source: John Long's Climbing Anchors/ Rockclimbing.com/ personal experience

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope Trad x Mountaineering x
Sport Ice Other (list)

Description: In John Long's Climbing Anchor's book he suggests that when setting up your belay anchor using a cordalette to connect your pro pieces you find the pro too far apart for the cordalette to effectively reach/work, that you can untie the cordalette and re-tie it as webolette to get more "reach."

Sounds great, but the unmentioned/implied steps include:

- untie cordalette
- tie figure 8's on both ends of line
- construct anchor using newly formed webolette
- after belaying, break down anchor
- untie figure 8's
- retie as cordalette

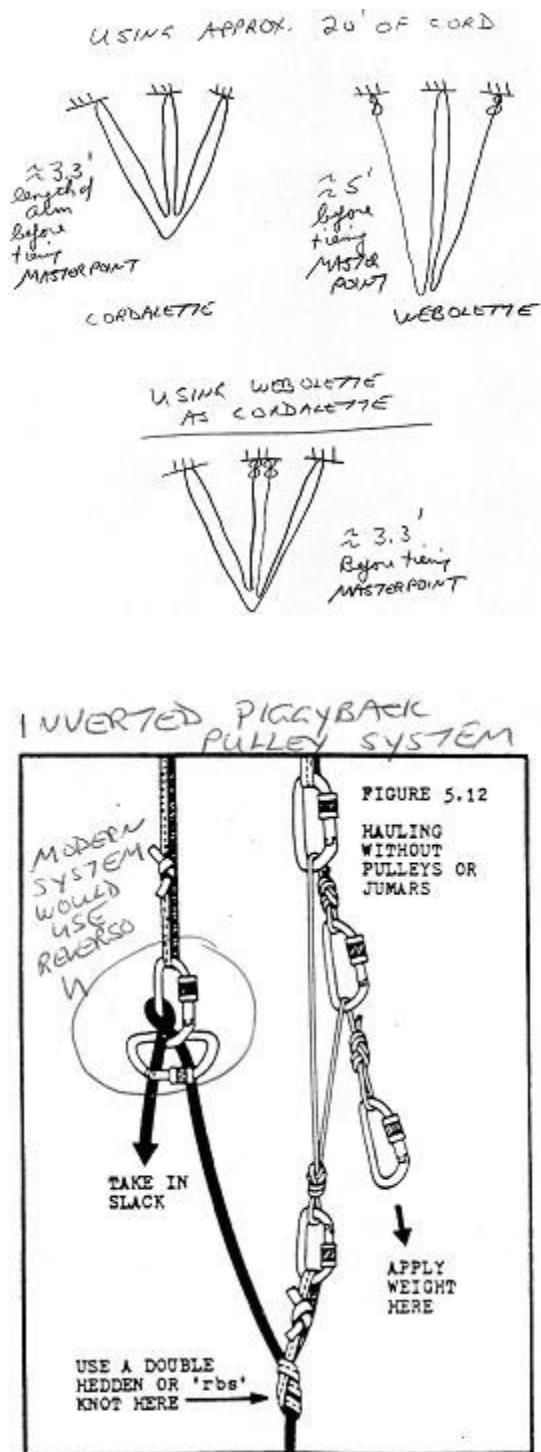
That is a lot of tying and untying of knots (even assuming they haven't been heavily weighted and a pain to untie) and is a time consuming number of steps.

On rockclimbing.com it was suggested to leave your length of cord permanently tied as a webolette and when needed as a cordalette, just attach the two figure 8 knots to one of the carabiners of your pro and tie cordalette and master point as usual.

A curmudgeon might point out that there are now 2 knots in the system (i.e. one more point of possible failure), but an optimist would point out that that arm of the cordalette now has a level of redundancy that wouldn't exist in a "normal" cordalette (i.e. knot failure would not result in loss of that arm). Another drawback is that with some arms using a single strand and other arm using a double strand, there would be unequal strength and possibly unequal stretch in the arms in the event of a fall and loading the anchor.

On a positive note, having a readily available longer piece of anchoring material offers up other anchoring possibilities like girth hitching the webolette around a tree and running this longer length cord to your anchor set up.

Like it or not; use it or not - just another trick to store in your bag. A crude diagram is attached.



ONTARIO ROCK CLIMBING
ASSOC. - SAFETY
MANUAL

Adding a Keeper Cord to your GriGri

Source:

Contributed by: Marty Comiskey (martycomiskey@yahoo.com)

Best useful for: Top rope X Trad X Mountaineering
Sport X Ice X Other (list)

Description:

Do you use a GriGri? It is a nice belay device. One thing that is missing (at least in some people's opinion) is a keeper cord.

I came across this modification on the website www.bigwalls.com. To quote the author, "I highly recommend not dropping your GriGri." That's good advice, but I'm sure we have all done so, or at least worry about dropping our belay device (especially while wearing large gloves when ice climbing). If you'd like to add a Keeper Cord to your GriGri, here is a simple modification for the original Petzl GriGri (I do not know if it works on the smaller new GriGri 2).

I did this modification to my GriGri today – it took less than 5 minutes to do. There are pictures and descriptions on the bigwalls website:

p.s. - 1/23/12 - a climber contacted me to let me know that this modification will void the Petzl warranty. Just something to consider before you decide to do this modification.
